

What is claimed is:

1. An automatic performance system comprising:

performance pattern storage means for storing a plurality of performance patterns, the performance patterns comprising data representing events corresponding to the production of tones;

pattern sequence storage means for storing pattern sequence data representing a sequence of said performance patterns;

signal processing means for producing tones corresponding to the performance patterns of a pattern sequence;

an operator for use by a user during performance of a pattern sequence to generate events representing the addition of a tone to or deletion of a tone from the pattern sequence at the location in the pattern sequence at which the event is generated;

creation means for creating a new performance pattern in accordance with events generated by the operator and a performance pattern that was performed during occurrence of those events; and

modification means for modifying the pattern sequence to substitute the identifier of the new performance pattern for the identifier of the performance pattern from which it was created in the pattern sequence.

2. The automatic performance system cited in Claim 1, wherein the operator generates an event that represents the addition of a musical tone to the performance pattern.

3. The automatic performance system cited in Claim 1, wherein the operator generates an event that represents the deletion of a tone from the performance pattern.

4. The automatic performance system cited in Claim 1, wherein the new performance pattern created by the creation means adds tones and deletes tones in accordance with events generated by the operator and the timing of the occurrence of those events during performance of the performance pattern from which it is created.

5. A programmable device for automatically producing tones, the device including a computer readable medium storing programming code for controlling the device to perform processing comprising:

storing a plurality of performance patterns, the performance patterns comprising automatic performance data representing events corresponding to the production of tones;

storing pattern sequence data representing a sequence of said performance patterns;

performing a pattern sequence by generating tones represented in the performance patterns of the pattern sequence data;

receiving user input during the performance of the pattern sequence; and

in accordance with the user input, updating the performance patterns and pattern sequence data to add tones to or delete tones from the pattern sequence in accordance with the user input.

6. The device claimed in claim 5, wherein the event generated by user input is an event representing the addition of a tone, and

wherein the pattern sequence is updated to add the tone represented by the user input at a location during the performance of the pattern sequence at which the user input was received.

7. The device claimed in claim 6, wherein the user input is produced by the operation of an operator representing a particular tone.

8. The device claimed in claim 5, wherein the event generated by user input is an event representing the deletion of a tone, and

wherein the pattern sequence is updated to add the tone represented by the user input at a location during the performance of the pattern sequence at which the user input was received.

9. The device claimed in claim 8, wherein the user input is produced by the concurrent operation of an operator representing a particular tone and an operator representing the deletion of a tone.

10. The device claimed in claim 5, wherein updating the pattern sequence to add or delete tones comprises:

creating a new performance pattern from the performance pattern that is being performed when the user input is received in accordance with the user input; and

modifying the pattern sequence to substitute the performance pattern identifier of the new performance pattern for the performance pattern identifier of the performance pattern from which the new performance pattern was created.

11. The device claimed in claim 5, wherein the tones comprise musical notes.

12. The device claimed in claim 5, wherein the tones comprise percussive sounds.

13. A method in a device for automatically producing tones, comprising:

- storing a plurality of performance patterns, the performance patterns comprising automatic performance data representing events corresponding to the production of tones;
- storing pattern sequence data representing a sequence of said performance patterns;
- performing a pattern sequence by generating tones represented in the performance patterns of the pattern sequence data;
- receiving user input during the performance of the pattern sequence; and
- in accordance with the user input, updating the performance patterns and pattern sequence data to add tones to or delete tones from the pattern sequence in accordance with the user input.

14. The method claimed in claim 13, wherein the event generated by user input is an event representing the addition of a tone, and

- wherein the pattern sequence is updated to add the tone represented by the user input at a location during the performance of the pattern sequence at which the user input was received.

15. The method claimed in claim 14, wherein the user input is produced by the operation of an operator representing a particular tone.

16. The method claimed in claim 13, wherein the event generated by user input is an event representing the deletion of a tone, and

- wherein the pattern sequence is updated to add the tone represented by the user input at a location during the performance of the pattern sequence at which the user input was received.

17. The method claimed in claim 16, wherein the user input is produced by the concurrent operation of an operator representing a particular tone and an operator representing the deletion of a tone.

18. The method claimed in claim 13, wherein updating the pattern sequence to add or delete tones comprises:

creating a new performance pattern from the performance pattern that is being performed when the user input is received in accordance with the user input; and

modifying the pattern sequence to substitute the performance pattern identifier of the new performance pattern for the performance pattern identifier of the performance pattern from which the new performance pattern was created.

19. The method claimed in claim 13, wherein the tones comprise musical notes.

20. The method claimed in claim 13, wherein the tones comprise percussive sounds.

21. A method in a device for automatically producing tones, comprising: storing musical data representing events corresponding to the production of tones;

performing the musical data by generating tones represented in the musical data;

receiving user input during the performance of the musical data; and

in accordance with the user input, updating the musical data to add tones to or delete tones from the musical data in accordance with the user input.